

REMARKS

In an Office Action mailed on March 31, 2006, objections were made to the drawings and claim 1; claims 1, 4-11 and 15 were rejected under 35 U.S.C. § 102(b) as being anticipated by Retz; claims 16, 17, 21-23, 25 and 32-34 were rejected under 35 U.S.C. § 102(b) as being anticipated by McCullough; claims 43 and 44 were rejected under 35 U.S.C. § 102(b) as being anticipated by Gore; claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Retz in view of Gore; claims 27, 28, 38 and 39 were rejected under 35 U.S.C. § 103(a) as being patentable over McCullough in view of Gore; and claims 3, 12-14, 18-20, 24, 26, 29-31, 35-37, 40-42 and 45-47 were objected to as being dependent upon rejected base claims but were indicated as being allowable if rewritten in independent form.

Regarding the objections to the drawings, original claim 3 erroneously stated that the spring has a wall thickness that increases from point near the end of the spring to a point near a midpoint of the spring and should alternatively have stated a wall thickness that decreases from a point near the end of the spring to a point near a midpoint of the spring. Although claim 3 has been cancelled, limitations from original claim 3, which have been changed to address the objection to the drawing, now appear in newly-added independent claim 48. Regarding the objection to claim 1, claim 1 has been amended to overcome the corresponding claim objection.

Limitations from claims 3, 12 and 29, which have been indicated as being allowable by the Examiner have been incorporated into newly-added independent claims 48, 49 and 53, respectively; and thus, for at least this reason, Applicant respectfully requests allowance of newly-added claims 48-55. The §§ 102 and 103 rejections are addressed below.

§§ 102 and 103 Rejections of Claims 1, 2, 6-9 and 15:

As amended, the method of independent claim 1 includes deploying a spring downhole and energizing the spring before running the spring downhole. The method of claim 1 also includes in the well, releasing energy that is stored in the spring to cause the spring to radially expand.

Claim 1 has been amended to add limitations, which correspond to those in original claim 4 (now cancelled). Therefore, the § 103 rejection of claim 4 is addressed below.

The Examiner rejected claims 1 and 4 under 35 U.S.C. § 102(b) in view of Retz. However, Retz fails to teach or even suggest in a well, releasing energy stored in a spring to cause the spring to radially expand. To the contrary, Retz discloses pressing elements 54, which

are disposed longitudinally between a stationary mount 56 and a movable mount 58. The movable mount 58 is movable via rods 60 for purposes of moving the movable mount 58 closer to the stationary mount 56 for purposes of compressing the pressing elements 54 to cause their radial expansion. Retz is explicit that prior to the running of its apparatus downhole, the movable mount 58 is moved in a manner that retracts the pressing elements 54 to the position that is depicted in Fig. 2. Retz, 7:7-11.

The pressing elements 54 reside inside a liner 66 that is also deployed downhole. The liner 66 is held in place by fasteners 70. When the liner 66 is positioned downhole, the fasteners 70 are released to cause the radial expansion of the liner 66. Retz, 8:1-3. After the release of the liner 66, the rods 60 are activated to move the movable mount 58 downwardly toward the stationary mount 56 to cause the radial expansion of the pressing elements 54. Retz, 8:8-13. Retz does not, however, teach or even suggest storing energy in the pressing elements 54 prior to their deployment downhole and releasing energy stored in the pressing elements 54 once downhole for purposes of causing their radial expansion. As such, Retz fails to teach or even suggest the limitations of amended independent claim 1.

Claims 2, 6-9 and 15 are patentable for at least the reason that these claims depend from an allowable claim. Therefore, for at least the reasons that are set forth above, withdrawal of the §§ 102 and 103 rejections of claims 1, 2, 6-9 and 15 is requested.

§§ 102 and 103 Rejections of Claims 16 and 17:

The method of independent claim 16 includes forming a helical groove in a tubular member to form a spring that is used to expand in a well to form an annular barrier.

Independent claim 16 stands rejected under 35 U.S.C. § 102(b) in view of McCullough. McCullough discloses a generally cylindrical body 10, a bridge plug, that has a series of generally helical slots 14. McCullough further describes that the body 10 may be formed out of metals such as steel, copper, brass, aluminum or various alloys. McCullough, 2:46-47. However, McCullough fails to teach or suggest a *spring* that is formed from a helical groove in a tubular member. In this manner, although at first glance McCullough's bridge plug may appear to be a spring, there is no teaching or suggestion in McCullough that the cylindrical body 10 has any spring-like properties. To the contrary, McCullough states that the body anchors, "the plug very strongly against slippage or displacements by any loads which would be subsequently

supported thereon." McCullough, 2:63-66. Thus, the body 10 is an expandable tube (via the expansion space that is provided by the helical slots), but the body 10 is not a spring. As such, McCullough fails to teach or even suggest the method of independent claim 16.

Claim 17 is patentable for at least the reason that this claim depends from an allowable claim. Thus, for at least the reasons that are set forth above, withdrawal of the §§ 102 and 103 rejections of claims 16 and 17 is requested.

§§ 102 and 103 Rejections of Claims 21-23, 25, 27 and 28:

As amended, the apparatus of independent claim 21 includes a spring that is adapted to be energized before being run into a well and in the well release storing energy in the spring to cause the spring to radially expand to form an annular barrier in the well.

Claim 21 stands rejected under 35 U.S.C. § 102(b) as being anticipated by McCullough. As discussed above in the rejection of independent claim 16, McCullough describes a bridge plug that forms a barrier in a well. However, McCullough's bridge plug is not a spring. Therefore, for at least the reason that McCullough fails to disclose the spring of independent claim 21, McCullough fails to anticipate this claim. It is noted that Retz, discussed above in connection with claim 1, fails to teach or suggest a spring that is adapted to release stored energy in a well to cause the spring to radially expand. Thus, amended independent claim 21 is also patentable in view of Retz.

Claims 22, 23, 25, 27 and 28 are patentable for at least the reason that these claims depend from an allowable claim. Therefore, for at least the reasons that are set forth above, withdrawal of the §§ 102 and 103 rejections of claims 21-23, 25, 27 and 28 is requested.

§§ 102 and 103 Rejections of Claims 32-34, 38 and 39:

As amended, the system of independent claim 32 includes a spring that is adapted to form an annular barrier in a well. The spring includes a profile that varies along a longitudinal length of the spring.

Claim 32 stands rejected under 35 U.S.C. § 102(b) as being anticipated by McCullough. However, as discussed in connection with independent claim 16, McCullough discloses a bridge plug formed from a cylindrical body 10, which is not a spring. Therefore, for at least the reason

that McCullough fails to disclose the spring of claim 32, McCullough fails to anticipate this claim.

McCullough fails to anticipate independent claim 32 for at least the additional, independent reason that its bridge plug does not have a profile that varies along the longitudinal length of the plug.

Claims 33, 34, 38 and 39 are patentable for at least the reason that these claims depend from an allowable claim. Therefore, for at least the reasons that are set forth above, withdrawal of the §§ 102 and 103 rejections of claims 32-34, 38 and 39 is requested.

§ 102 Rejections of Claims 43 and 44:

As amended, the apparatus of independent claim 43 includes a spring that is mounted to a base pipe and includes a profile that varies along a longitudinal length of the spring.

Contrary to the limitations of amended independent claim 43, Gore discloses a rubber shell 48 that contains a spring, or spiral 49. *See, for example*, Gore 5:21-28. However, the spiral 49 does not have a profile that varies along a longitudinal length of the spiral 49. Therefore, for at least this reason, Gore fails to anticipate amended independent claim 43.

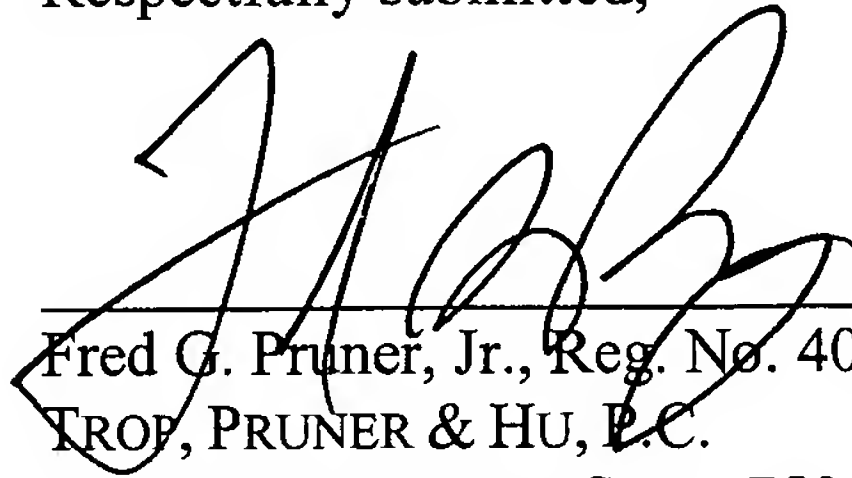
Claim 44 is patentable for at least the reason that this claim depends from an allowable claim. Therefore, for at least the reasons that are set forth above, withdrawal of the § 102 rejections of claims 43 and 44 is requested.

CONCLUSION

In view of the foregoing, withdrawal of the §§ 102 and 103 rejections and a favorable action in the form of a Notice of Allowance are requested. The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 20-1504 (SHJ.0003US).

Respectfully submitted,

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Fred G. Pruner, Jr., Reg. No. 40,779
TROP, PRUNER & HU, P.C.
1616 S. VOSS ROAD, SUITE 750
HOUSTON, TEXAS 77057
713/468-8880 [Phone]
713/468-8883 [Fax]